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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,550	11/19/2001	Shin-Ichi Shimizu	215279US3PCT	8600

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
GRIFFIN, WALTER DEAN	
ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 11/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/926,550	SHIMIZU ET AL.	
	Examiner	Art Unit	
	Walter D. Griffin	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 April 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *202,403* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 96/26992.

The WO reference discloses a process for treating a crude oil. The process comprises separating the crude oil in a distillation unit to produce a distillate fraction and a heavy fraction. The distillation unit can comprise the combination of an atmospheric distillation column and a vacuum distillation column. In this situation, the atmospheric column corresponds to the pre-separation apparatus of claim 2 and the vacuum distillation column corresponds to the main separation apparatus of claim 2. The heavy fraction separated in the distillation step is then thermally cracked to produce a lighter fraction. This lighter fraction produced in the thermal cracking step is then passed to the crude oil distillation unit. The WO reference also discloses that the heavy fraction fed to the thermal cracker contains more than 90% by weight of hydrocarbons having a boiling point above 520°C. This type of heavy fraction would necessarily exclude gas oils. See page 2, line 17 through page 3, line 16; page 4, line 33 through page 5, line 17; page 11, line 27 through page 12, line 25; page 13, line 33 through page 14, line 15; Example 2; and claims 1-4.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/26992.

The WO reference discloses a process for treating a crude oil. The process comprises separating the crude oil in a distillation unit to produce a distillate fraction and a heavy fraction. The distillation unit can comprise the combination of an atmospheric distillation column and a vacuum distillation column. In this situation, the atmospheric column corresponds to the pre-

separation apparatus of claim 2 and the vacuum distillation column corresponds to the main separation apparatus of claim 2. The heavy fraction separated in the distillation step is then thermally cracked to produce a lighter fraction. This lighter fraction produced in the thermal cracking step is then passed to the crude oil distillation unit. The WO reference also discloses that the heavy fraction fed to the thermal cracker contains more than 90% by weight of hydrocarbons having a boiling point above 520°C. This type of heavy fraction would necessarily exclude gas oils. See page 2, line 17 through page 3, line 16; page 4, line 33 through page 5, line 17; page 11, line 27 through page 12, line 25; page 13, line 33 through page 14, line 15; Example 2; and claims 1-4.

The WO reference does not disclose the relative amount of heavy oil separated as in claim 3 and does not disclose that there is no heavy oil contained in the thermal cracking residue.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the WO reference by separating heavy oil in the relative amounts claimed because the WO reference discloses that the boiling range for the heavy oil can vary. Therefore, one having ordinary skill in the art would recovery any amount of heavy oil that would provide the required boiling range material for the cracking step.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the WO reference by assuring the none of the heavy oil is contained in the thermal cracking residue because 100 percent conversion will result in the maximum production of the lighter cracked oil product.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/26992 as applied to claim 1 above, and further in view of Reed Jr., et al. (US 3,830,731).

As discussed above, the WO reference does not disclose that the distillate oil is hydrotreated.

The Reed reference discloses that a distillate fraction recovered in a vacuum distillation step is hydrotreated. See column 2, lines 58-63 and the Figure.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the WO reference by hydrotreating the distillate fraction as suggested by Reed because a low sulfur product will result.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is 703-305-3774. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
October 28, 2003